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INSECT PEST SURVEY BULLETIN

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THE MORE IMPORTANT RECORDS FOR APRIL, 1933

During late March and early April cutworms were very troublesome to tomatoes and Irish potatoes in southern Mississippi. The outbreak of the western army cutworm reported in the last number of the Insect Pest Survey Bulletin from Kansas terminated about the third week in April, and during the last week in the month moths were emerging in numbers. In one instance during the height of the outbreak populations as high as 90 cutworms per square foot were observed near Manhattan. This species was also troublesome in several localities in Montana.

Grasshopper eggs examined late in April in North Dakota and Wyoming were found to have wintered with very low mortality; 90 per cent survival is reported from North Dakota and 95 per cent from Wyoming.

An outbreak of the mormon cricket has developed in eastern Idaho.

The wireworm Heteroderes laurentii Guer. was very troublesome in southern Alabama early in the month, and in many patches every kernel of corn was attacked.

The vegetable weevil has been found at Clemson College, S.C. This is the northeasternmost record for this insect and the first record for this State.

Heavy rains during the second and third weeks in April had very little effect on hibernating chinch bugs in Illinois. The insect also seems to have passed the winter successfully in Missouri, Kansas, and parts of Iowa.

In general apple aphids are decidedly less numerous than usual. The rosy apple aphid, however, during the later part of the month developed in troublesome numbers in New York and Virginia.

The first specimen of the plum curculio was recorded from hibernation in eastern Jackson County, Miss., on March 20, at Harriman, Tenn., on April 6, and at Newark, Del., on April 10. These insects suffered such heavy mortality in the Fort Valley peach district of Georgia that little trouble is anticipated from this pest this year.

Following a very dry March, strawberries in the Chadbourn district of North Carolina were very heavily infested with the common red spider. In some localities this infestation was so heavy that no marketable crop was harvested.

A single egg mass of the gipsy moth has been discovered at Mount Freedom, Morris County, N. J. This is the first record in this State since the eradication campaign was closed four years ago.

Heavy infestations of the southern pine beetle have been found in southern Pennsylvania, western Maryland, and northern Virginia. This is the most notable outbreak since that of 1893 and is located in the northernmost part of the range of this insect.

GENERAL FEEDERS

CUTWORMS (Noctuidae)

North Carolina. L. B. Reed (April 21): Some damage has been noted on strawberries at Chadbourn.

Florida. F. S. Chamberlin (April 14): Cutworms are only moderately abundant on newly-set tobacco and other crops in Gadsden County.

Kentucky. W. A. Price (April 24): Cutworms are abundant in the vicinity of Lexington.

Tennessee. G. M. Bentley (April): Agrotis ypsilon Rott. is moderately abundant in Knox County.

J. U. Gilmore (April 25): Cutworms are not nearly so numerous at Clarksville this spring as they have been for a number of years, and very little damage has been seen or reported.

Mississippi. K. L. Cockerham (April 10): From March 24 to the present time cutworms have been very bad in Biloxi. Tomato plants and Irish potatoes have been severely damaged.

Kansas. H. B. Hungerford (April 20): Cutworms are very abundant in Baldwin and Newton on peonies and other plants.

H. R. Bryson (April 23): The moths of the western army cutworm, Chorizagrotis auxiliaris Grote, were out last week at McPherson and southward to the State borders. Injury has ceased, and the worms are going into the pupal stage. The damage was confined largely to fall-sown alfalfa, wheat, oats, and vetch. Between March 27 and April 17, reports of injury were received from Clommel, Andale, Colwich, Buhler, Herington, Ellsworth, Jamestown, Chautauqua, Frankfort, Gypsum, Courtland, Bison, and Hillsboro. Counts made at Manhattan showed a population of 45 to the square foot. As many as 90 were taken on 1 square foot of soil in a patch of vetch.

Montana. A. L. Strand (April 20): The army cutworm, C. auxiliaris, has been present in winter wheat fields near Portage and Power, Cascade County. Since first reported in March they have been covered by 1 to 2 feet of snow.

ARMYWORM (Cirphis unipuncta Haw.)

Illinois. W. P. Flint (April 19): Very heavy flights of armyworm moths occurred in central Illinois on the night of April 9. The flight was apparently general.

SOUTHERN ARMYWORM (Prodenia eridania Cram.)

Florida. J. R. Watson (April 25): On March 11 the young caterpillars of the semi-tropical army worm were sent in from Bartow, where they were injuring grass in lawns and other plants.

GRASSHOPPERS (Acrididae)

North Dakota. J. A. Munro (April 21): Eggs of Camnula pellucida Scudd. have been received from Renville and Ward Counties for testing. More than 90 per cent of

them are in hatchable condition. The soil samples were very heavily infested with eggs.

Wisconsin. C. L. Fluke (April 24): Grasshoppers are reported in Richland County. Hatching began as early as April 12.

Wyoming. C. L. Corkins (April 19): Egg survival is 95 per cent. Spring is backward. I do not expect hatching for several weeks. Indications point to more or less serious infestations in the Bighorn Basin.

WHITE GRUBS (Phyllophaga spp.)

Connecticut. W. E. Britton (April 22): Four adults (P. tristis Fab.) were received from Willimantic, where this insect was reported as abundant in patches where the grass had been killed. Usually we do not consider this as a very destructive species.

Pennsylvania. J. N. Knull (April 1): Reports indicate that many white grubs are infected with a fungus, in the area in Perry County where they did considerable damage to coniferous plantings in 1932.

Ohio. E. W. Mendenhall (April 24): White grubs are very abundant in southeastern counties on strawberry plants.

Illinois. W. P. Flint (April 19): These insects are now working their way out to the surface soil; in the central and northern parts of the State only small numbers are yet in the area ordinarily reached in plowing. Mr. Chandler reports finding 40 white grubs in 300 square yards of earth at Carbondale. These were almost equally divided between grubs of Phyllophaga and those of the southern June beetle, Cotinis nitida L.

Wisconsin. C. L. Fluke (April 24): White grubs are moderately abundant in Lafayette County. Adults of Brood A are present in considerable numbers but have not emerged.

Iowa. H. E. Jaques (April 25): White grubs show evidence of causing serious damage later. Carroll, Jasper, Wright, Palo Alto, Osceola, Buena Vista, Henry, Tama, and Union Counties report them as showing up.

Missouri. L. Haseman (April 24): White grubs are moderately abundant at Columbia. Most grubs taken at this time are one-half grown.

Kansas. H. R. Bryson (April 23): White grubs are moderately abundant at Manhattan, and are feeding very close to the surface of the soil.

WIREWORMS (Elateridae)

Maine. C. R. Phipps (April 25): Agriotes mancus Say is moderately abundant generally over the State. In last season's potato fields the wireworms are at a depth of 6 to 8 inches.

Virginia. H. G. Walker (April 26): Wireworms are moderately abundant in some potato fields at Norfolk.

Alabama. K. L. Cockerham (April 5): On April 5 Heteroderes laurentii Guer. was found very plentiful in young corn in some plats at Foley. Nearly every sprouting kernel had been attacked. Damage seemed to be worse in corn spaced 3 feet in the rows than in rows where the seed was thickly planted.

Missouri. L. Haseman (April 24): Wireworms are moderately abundant at Columbia, in some sod-land, but not so abundant generally speaking.

California. E. O. Essig (April 22): Wireworms are moderately abundant in the Delta district.

A. E. Michelbacher (April 20): Near Rio Vista during the past month a small species of wireworm (probably Anchastus cinereipennis Mann.) has caused slight damage to sugar beets. A larger species (probably Limonius canus Lec.) has completely destroyed the sugar-beet stand over a couple of acres of very sandy land near Courtland. Both of these places are in the Delta area of the Sacramento River.

JAPANESE BEETLE (Popillia japonica Newm.)*

New Jersey. C. H. Hadley (April 25): During April, larvae of the Japanese beetle resumed activity and were in process of moving upward in the soil from their hibernating quarters to their usual feeding areas just beneath the ground surface. In the older infested districts indications point to some reduction in numbers compared with 1932, with, however, some local exceptions.

ASIATIC GARDEN BEETLE (Autoserica castanea Arrow)

New Jersey. C. H. Hadley (April 25): Grubs of the Asiatic garden beetle are now moving up in the soil from their winter hibernating quarters.

ASIATIC BEETLE (Anomala orientalis Waterh.)

New York. C. H. Hadley (April 25): The grubs of the oriental beetle are starting to return to the upper layer of soil. At Jericho, Nassau County, grubs have killed 20 per cent of the plants in a red raspberry bed. Over 50 grubs were found around the roots of one plant.

COMMON RED SPIDER (Tetranychus telarius L.)

Mississippi. C. Lyle and assistants (April): Red spiders are very abundant on citrus and other plants at Ocean Springs.

Nebraska. D. B. Whelan (April): Red spiders are quite numerous on gooseberries.

MORMON CRICKET (Anabrus simplex Hald.)

Idaho. W. H. Larrimer (May 2): The outbreak scheduled to occur again this year in eastern Idaho has materialized according to reports from that State.

*Correction. Page 39 - April 1, 1933. State is New Jersey, not Pennsylvania for note on Popilla japonica Newm. and Cotinis nitida L.

CEREAL AND FORAGE - CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

- Iowa. C. J. Drake (April): Moderate infestation along the Missouri River, especially in Monona County.
H. E. Jaques (April 25): The Hessian fly is reported from the following counties: Warren, Monona, Union, Wright, Henry, Osceola, and Palo Alto.
- Missouri. L. Haseman (April 24): Indications are that the Hessian fly will be serious in central and perhaps southeastern Missouri this spring.
- Kansas. H. B. Hungerford (April 20): The Hessian fly is moderately abundant in Lawrence.
- Nebraska. M. H. Swenk (April 20): The Hessian flies are moderately abundant.

CHINCH BUG (Blissus leucopterus Say)

- Illinois. W. P. Flint (April 19): There has been no movement as yet from winter quarters. Recent examinations by Mr. Bigger show that the heavy rains of the past two weeks have had little effect in killing bugs in hibernation.
- Iowa. C. J. Drake (April): Chinch bugs are numerous in 16 counties.
H. E. Jaques (April 25): Chinch bugs are in evidence in Lee, Osceola, Henry, Union, and Carroll Counties.
- Missouri. L. Haseman (April 24): The chinch bugs in central Missouri have been moving to wheat and in some fields are mating. Infestation is quite general and in some fields heavy.
- Kansas. H. B. Hungerford (April 12): The chinch bug is moderately abundant in Douglas County. (April 20): The chinch bug is moderately abundant in Lawrence.
H. R. Bryson (April 23): It is difficult to form an accurate opinion regarding the status of the chinch bug situation at Manhattan at this time. More chinch bugs were in hibernation in bunch grass during the past winter than one year ago. It is known that the mortality of the hibernating bugs was very small.
- Nebraska. M. H. Swenk (April 20): The chinch bug is moderately abundant.

CORN

CORN EAR WORM (Heliothis obsoleta Fab.)

- Alabama. J. M. Robinson (April 21): Adults are active in Auburn in moderate abundance.

CORN FLEA BEETLE (Chaetocnema pulicaria Melsh.)

- North Carolina. C. H. Brannon (April 11): A field of young corn in Scotland County was seriously damaged.

ALFALFA

ALFALFA WEEVIL (Hypera postica Gyll.)

Nevada. G. G. Schweis (April 20): The alfalfa weevil is moderately abundant at Reno and Fallon. Oviposition has started although the temperature is below normal.

California. A. E. Michelbacher (April 20): Throughout the infested area there has been an increase in the number of larvae collected. The heaviest infestations are apparently around Pleasanton. Rather large numbers of the larvae have also been collected in the Niles and Tracy areas. In the fields which have received but little care some damage has been done but for the most part it has been very slight. At the present time larvae of all stages of development can be collected. Egg laying is still going on, and adults of the new generation have been emerging for some little time.

ALFALFA WEBWORM (Loxostege commixtalis Walk.)

Colorado. G. M. List (April 25): Moths of the alfalfa webworm began to appear in limited numbers in the more southern part of the state early in April. Some have been noted flying in the Fort Collins section during the last few days. The height of the flight will probably occur about the middle of May. The overwintering forms are very numerous in the soil in many sections of the eastern half of the state. In some fields the population averages from 2 to 4 per square foot.

CLOVER LEAF WEEVIL (Hypera punctata Fab.)

Utah. G. F. Knowlton (March 25): An adult clover leaf weevil was found in hibernation under a rock in the foothills east of Logan, about 1 mile from the nearest alfalfa field.

PEA APHID (Illinoia pisi Kalt.)

Virginia. H. G. Walker (April 26): The pea aphid is becoming very abundant and injurious on alfalfa and is beginning to migrate to peas.

Mississippi. C. Lyle and assistants (April): The pea aphid was first observed April 16 at Pascagoula on peas. It is also reported as very abundant on English peas at Ocean Springs. (Abstract, J.A.H.)

Kansas. H. R. Bryson (April 23): The cold, dry weather in Kansas apparently was conducive to the development of the pea aphid. Reports of injury to alfalfa have come from Newton, Herington, Cottonwood Falls, and Manhattan.

California. A. E. Michelbacher (April 20): The pea aphid on alfalfa increased up to cutting of the first crop. This pest was very abundant around Vernalis, and quite numerous in some fields about Tracy.

A PLANT BUG (Thyanta puctiventris Van D.)

Utah. G. F. Knowlton (April 4): This pentatomid is abundant on an alfalfa seed farm at Deseret, causing the farmers some concern.

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana. H. A. Jaynes and E. K. Bynum (April 14): While examining sugarcane plants during the week of April 7 to 13, we found 10 egg clusters of the sugarcane borer and also two stalks of cane with young borer larvae. The egg clusters were not very numerous, as we examined 7,000 feet of cane, both sides of all leaves, and obtained only 10 clusters.

F R U I T I N S E C T S

APPLE

APHIDS (Aphidae)

Vermont. H. L. Bailey (April 25): Fruit aphids are scarce in Orange and Washington Counties.

Connecticut. W. E. Britton (April 24): Fruit aphids are scarce.

New York. P. J. Chapman (April 22): Rosy aphids (Anuraphis roseus Baker) are unusually abundant on opening buds in the Hudson Valley.

N. Y. State Coll. of Agr. News Letter (April): Rosy aphids started to appear in the second week of the month and developed rapidly in the Hudson River Valley and the Finger Lake district. By April 24, as many as 70 aphids could be found in 100 buds. During the last week in the month the apple grain aphid (Rhopalosiphum prunifoliae Fitch) was quite scarce throughout the Hudson River Valley but in the western part of the State it was quite abundant. By the middle of the month the green apple aphid (Aphis pomi DeG.) was starting to hatch in the Lake district, and central New York. (Abstract, J.A.H.)
P. J. Parrott (April 21): The rosy aphid, the grain and green aphids are moderately abundant in western New York.

Pennsylvania. H. N. Worthley (April 29): Rosy aphid reported scarce at State College. Hatched in mid-April - early when buds in early delayed dormant, recent cold weather has greatly reduced the population.

West Virginia. L. M. Peairs (April 24): Rosy and green aphids are moderately abundant at Morgantown.

Virginia. W. J. Schoene (April 26): We have received reports of an outbreak of rosy aphids in the northern part of the State. These insects are more abundant than they have been for some years.

Maryland. E. N. Cory (April 22): Fruit aphids are scarce.

South Carolina. A. Lutken (April 24): Green apple aphids are moderately abundant in northwestern South Carolina.

Georgia. C. H. Alden (April 20): Green apple aphids are scarce in Cornelia.

Wisconsin. C. L. Fluke (April 24): Apple grain aphids are scarce. There are many less than last year. They hatched about April 10.

Tennessee. G. M. Bentley (April): A. pomi is moderately abundant in Knox County.

Missouri. L. Haseman (April 24): At Columbia to date no bad effects from rosy aphids have been noted. Also the other two species seem to be doing no harm.

Mississippi. C. Lyle and assistants (April): Fruit aphids have continued unusually scarce throughout the State. On March 30 a very heavy infestation of the woolly apple aphid (Eriosoma lanigerum Hausm.) was observed on elm trees on the property of the School for the Deaf in Jackson. The trees shed a large number of leaves owing to this heavy infestation. (Abstract, J.A.H.)

Oregon. D. C. Mote (April 10): 30 per cent of A. roseus hatched by April 10 in the Willamette Valley.

Utah. G. F. Knowlton (April 19): Fruit aphids are moderately abundant in northern Utah. Eggs have about all hatched.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

West Virginia. L. M. Peairs (April 24): The San Jose scale is moderately abundant at Morgantown on scattered peach trees.

Ohio. E. W. Mendenhall (April 24): Where there has been neglect in the dormant spray there is an increase in the infestation on fruit trees in central Ohio.

Wisconsin. E. L. Chambers (April 25): We have made accurate counts of San Jose scale survival in a number of sections of the State in search for suitable experimental plots and have found in Sheboygan County, the point farthest north where San Jose scale has ever been found in Wisconsin, a number of small orchards within the city limits which showed 94 per cent dead scales, while in Racine County the survival was greater, the percentage being 10 to 15.

Iowa. H. E. Jaques (April 25): The San Jose scale is reported as doing serious damage in Buena Vista, Tama, Pottawattamie, Palo Alto, Carroll, Clay, Sioux, Union, Lyon, Guthrie, and Osceola Counties.

Missouri. L. Haseman (April 24): In central Missouri on trees where the San Jose scale was abundant last fall it does not seem to have survived the winter very well.

Mississippi. C. Lyle and assistants (April): The San Jose scale is from moderately to very abundant on a great variety of plants throughout the State. At Jackson it was so abundant as to be killing trees in a small orchard. (Abstract, J.A.H.)

CODLING MOTH (Carpocapsa pomonella L.)

Delaware. L. A. Stearns (April 24): Six per cent of overwintered larvae pupated April 13-14.

New York. P. J. Chapman (April 22): Overwintering caterpillars are scarce in most orchards in the Hudson Valley.

P. J. Parrott (April 21): Overwintering larvae are from moderately to very abundant in western New York.

South Carolina. A. Lutken (April 24): Eggs were found in the Clemson College orchard by April 18.

Georgia. C. H. Alden (April 20): The first moth emerged April 7 at Cornelia, a few moths being caught daily in bait traps. No egg deposition has been noted to date.

Illinois. W. P. Flint (April 19): First pupation in southern Illinois occurred at Carbondale on April 14.

Missouri. L. Haseman (April 24): The codling moth in southeastern Missouri on April 20, 15 per cent pupae; Columbia, April 8, 1 per cent pupae, and April 22, 25 to 30 per cent pupae; St. Joseph, April 18, 10 per cent pupae.

Kansas. H. R. Bryson (April 23): It is estimated in Doniphan County that approximately 50 per cent of the overwintering larvae passed the winter successfully. Since the infestation was very heavy last year there are strong prospects for an outbreak this year. It was not difficult to find larvae under bark scales in mature orchards, 76 larvae having been taken in a few hours' search.

EASTERN TENT CATERPILLAR (Malacosoma americana Fab.)

New Hampshire. L. C. Glover (April 24): The eastern tent caterpillars have started hatching today.

New York. P. J. Chapman (April 22): The eastern tent caterpillar is moderately abundant.

N. Y. State Coll. of Agr. News Letter (April): Tent caterpillars began hatching by the middle of the month in the Hudson River Valley in Dutchess and Ulster Counties. (Abstract, J.A.H.)

Delaware. L. A. Stearns (April 24): The first hatching was observed April 10.

Maryland. E. N. Cory and staff (April 22): The apple tree tent caterpillar is numerous in Prince Georges, Montgomery, Frederick, Washington, and Harford Counties.

F. Bauer (April 2): Egg clusters were hatching on April 2 at Southaven, Anne Arundel County.

Virginia. H. G. Walker (April 26): Eastern tent caterpillars are moderately abundant at Norfolk.

West Virginia. L. M. Peairs (April 24): The eastern tent caterpillar is moderately abundant at Morgantown. Eggs hatched by April 6 the earliest date in the field.

North Carolina. W. A. Thomas (April 20): This insect has been unusually abundant on wild cherry in southeastern North Carolina. Many trees have been completely defoliated. Most of the insects have pupated.

Georgia. O. I. Snapp (April 3): This insect is more abundant than usual at Fort Valley.

Tennessee. G. M. Bentley (April): Moderately abundant in eastern Tennessee.

FRUIT TREE LEAF ROLLER (Cacoecia argyrospila Walk.)

California. E. O. Essig (April 22): The fruit tree leaf roller is very abundant in the coastal section.

EYE-SPOTTED BUDMOTH (Spilonota ocellana Schiff.)

New York. N. Y. State Coll. of Agr. News Letter (April): Up to the end of the month but little damage was observed throughout the State. A few larvae were found entering buds in the Hudson River Valley. Similar conditions are reported from the western part of the State, where, however, most of them are in hibernaculae. (Abstract, J.A.H.)

APPLE CURCULIO (Tachypterellus quadrigibbus Say)

Kansas. H. R. Bryson (April 23): Hibernation studies indicate that fewer curculios were in hibernation in Doniphan County in March, 1933, than in March, 1932.

ROUND-HEADED APPLE TREE BORER (Saperda candida Fab.)

Missouri. L. Haseman (April 24): Round-headed apple tree borers are abundant where trees were not properly protected. They were in their pupal chambers but still in the larval stage on April 22.

PEACH

ORIENTAL FRUIT MOTH (Grapholitha molesta Busck)

New York. P. J. Parrott (April 21): Overwintering larvae are moderately abundant.

Pennsylvania. H. N. Worthley (April 29): The oriental fruit moth is very abundant, at State College and Biglerville, Adams Co. Little winter killing, pupation began in mid-April.

Delaware. L. A. Stearns (April 24): Seventy-two per cent of the overwintered larvae pupated April 13-14. The first emergence of spring brood moths occurred April 18.

South Carolina. A. Lutken (April 24): Moderately abundant in the northwestern part of the State. The emergence has passed its peak.

Georgia. O. I. Snapp (April 25): Eggs are beginning to hatch at Fort Valley. The first larva of the season (just hatched) was observed on April 15. Twig injury was evident on April 20. This is about the usual time for the first larvae to hatch and therefore the usual number of broods is anticipated this year. The dates of first twig injury other years are as follows: April 10, 1925; April 20, 1926; April 1, 1927; April 25, 1928; April 4, 1929; April 29, 1930, April 22, 1931; May 17, 1932. First-generation larvae appeared this year about a month earlier than they did in 1932.

W. H. Clarke (April 20): Oriental fruit moths are doing no twig injury in middle Georgia. They are still emerging from overwintering material.

C. H. Alden (April 20): A few moths are being caught in bait traps in Cornelia. There has been no egg laying yet.

Illinois. W. P. Flint (April 19): No oriental fruit moth twig injury in southern Illinois as yet.

Tennessee. H. G. Butler (March 31): Pupae were found in the insectary stock at Harriman March 15, and today (March 31) 4 adults emerged. This is two weeks earlier than the first observed emergence in 1932. (April 11): Eggs were found in insectary stock jars on April 10. These are the first eggs observed this season. (April 20): Eggs laid April 10 were hatching today (April 20). These were the first eggs secured from the insectary stock of moths.

LESSER PEACH BORER (Aegeria pictipes G. & R.)

Georgia. O. I. Snapp (April 20): The peak of spring-brood emergence has just been reached at Fort Valley.

PLUM CURCULIO (Conotrachelus nemuphar Hbst.)

Delaware. L. A. Stearns (April 24): The first emergence from hibernation was observed April 10.

South Carolina. A. Lutken (April 24): Plum curculios are scarce generally. Emergence has been slight.

Georgia. O. I. Snapp (April 14): An examination of adult curculios in hibernation cages containing bark and Johnson grass reveal a 100 per cent mortality. This is attributed to the unusually cold weather in February which followed a period sufficiently warm to cause peach trees to bloom. Jarring records show that there are very few curculios in the orchards and the infestation to date is much less than that of an average year. A few of the larvae in peach and plum are now about 1 week old. (April 20): This insect should not cause much damage this year if emergence from hibernation has already been completed. Jarring records continue to show a very light infestation in most orchards. Temperatures have been below normal, and this may be keeping some individuals in hibernation.

J. B. Gill (April 25): The plum curculio is moderately abundant at Albany on peaches and plums.

W. H. Clarke (April 6): The first eggs were found in fruits today at Thomaston (April 10): The first larvae of the season were found today.

C. H. Alden (April 20): The plum curculio is moderately abundant in Cornelia. It was found in peach orchards April 10.

Illinois. W. P. Flint (April 19): No curculios have been found in jarring peach trees in southern Illinois.

Tennessee. G. M. Bentley (April): The plum curculio is moderately abundant in Knox County.

H. G. Butler (April 6): The first overwintering curculios were taken in the jarring this morning in Harriman. This is two days later than the first ones taken in 1932. (April 20): The first egg was found this morning in an insectary stock jar. The infestation is much less than normal in all orchards so far examined.

Missouri. L. Haseman (April 24): No curculios have shown up in central Missouri.

Mississippi. C. Lyle and assistants (April): The plum curculio was first observed in East Jackson County on March 20. By the third week in April it was moderately abundant over the greater part of the State. (Abstract, J.A.H.)

PEAR

PEAR PSYLLA (Psyllia pyricola Foerst.)

New York. N. Y. State Coll. of Agr. News Letter (April): During the first week in April the pear psylla began laying eggs in the Hudson River Valley. Egg-laying, however, continued rather light through the next two weeks. In the western part of the State egg-laying was well under way by the middle of the month and was heavy during the third week when spraying was started in many sections. (Abstract, J.A.H.)

PEAR THRIPS (Taeniothrips inconsequens Uzel)

New York. N. Y. State Coll. of Agr. News Letter (April): During the first week in April the pear thrips started to emerge in the Hudson River Valley, and by the end of the month was causing considerable injury. (Abstract, J.A.H.)

CHERRY

BLACK CHERRY APHID (Myzus cerasi Fab.)

New York. N. Y. State Coll. of Agr. News Letter (April): The black cherry aphid was first observed in the Hudson River Valley early in April. As the month advanced this insect increased rapidly and by the 24th was very numerous in this section, and also in western New York. (Abstract, J.A.H.)

PLUM

RUSTY PLUM APHID (Hysteroneura setariae Thos.)

Mississippi. C. Lyle and assistants (April): The rusty plum louse is moderately abundant in East Jackson County, very abundant at West, and unusually abundant, causing fruit to drop, in Stone County. (Abstract, J.A.H.)

PEAR THRIPS (Taeniothrips inconsequens Uzel)

Oregon. D. C. Mote (April 10): Reached peak of emergence about March 31 in the Willamette Valley. (S.C.Jones)

RASPBERRY

RED-NECKED CANE BORER (Agrilus ruficollis Fab.)

Mississippi. C. Lyle (April 22): Injury to Youngberries was reported from Columbus, Lowndes County, on March 30.

A CANE BORER (Agrilus communis ab. rubicola Abeille de Perrin)

Michigan. R. Hutson (April 22): During the month of April we have bred out from material collected last summer A. communis ab. rubicola from raspberry.

Determination has been confirmed by W. S. Fisher, who informs us that a great deal of the damage hitherto ascribed to A. ruficollis in the central and southeastern parts of the State is due to A. communis ab. rubicola. At least, since we have bred out the pest and studied the injury, we find that the borings of A. communis var. rubicola more nearly resemble the specimens available from the central and southeastern sections of the State than those of A. ruficollis.

BLACK-HORNED TREE CRICKET (Oecanthus nigricornis Walk.)

Nebraska. M. H. Swenk (March 25 to April 20): A Cass County correspondent during the last week in March sent in raspberry stems heavily infested with eggs.

BLUEBERRY

A BLUEBERRY GALL INSECT (Hemadas nubilipennis Ashm.)

Michigan. R. H. Pettit (April 25): We have just bred out a few thousand H. nubilipennis from blueberries collected near South Haven earlier in the season. They emerged on the 21st of April. This constitutes the first record for the State, so far as we know, of this gall-forming cynipid. There were a number of thousands of the adults which emerged from about one-half pint of the galls. This is all the more alarming because the blueberry industry reaches quite important proportions at South Haven. That is where the new varieties are being worked out. The galls came from a wild patch in the vicinity of South Haven.

GRAPE,

GRAPEVINE APHID (Aphis illinoisensis Shimer)

Florida. M. D. Leonard (April 13): I found this aphid fairly commonly infesting shoots and new leaves in a fair sized vineyard near Sanford, April 13.

GRAPE FLEA BEETLE (Haltica chalybea Ill.)

Missouri. L. Haseman (April 24): Reported as serious in some vineyards in the vicinity of St. Louis, April 18.

APPLE TWIG BORER (Amphicerus bicaudatus Say)

Missouri. L. Haseman (April 24): In central Missouri a number of grape growers report this pest as being abundant in canes this spring.

CURRENT

IMPORTED CURRENT WORM (Pteronus ribesii Scop.)

Nebraska. D. B. Whelan (April): Egg-laying began about April 20, two days later than last year. An examination in April showed several leaves with eggs, mostly laid within 24 hours. On two leaves the larvae had hatched.

A LEAFHOPPER (Erythroneura sp.)

Nebraska. D. B. Whelan (April): Just as soon as the currant leaves unfold these leafhoppers attack them.

DEWBERRY

STRAWBERRY WEEVIL (Anthonomus signatus Say)

Alabama. J. M. Robinson (April 21): The strawberry weevil is moderately abundant on dewberries in Prattville.

PECAN

PECAN LEAF CASE BEARER (Acrobasis palliolella Rag.)

North Carolina. R. W. Leiby (April 21): The pecan leaf case bearer seems to be less abundant than usual according to examinations made of buds on pecan twigs for the number of hibernacula present.

Georgia. J. B. Gill (April 25): The pecan leaf case bearer larvae are doing serious damage to the buds and foliage in pecan orchards of southern Georgia. In unsprayed pecan orchards the damage will be quite extensive.

Mississippi. C. Lyle and assistants (April): The pecan leaf case bearer is very abundant at Ocean Springs. (Abstract, J.A.H.)

HICKORY SHUCK WORM (Laspeyresia caryana Fitch)

Georgia. J. B. Gill (April 25): The adults of the pecan shuckworm have been emerging in large numbers at Albany this spring.

A SAWFLY (Megaxyela major Cress.)

Mississippi. C. Lyle (April 22): A rather heavy infestation of sawflies, determined by J. M. Langston as M. major, on pecan trees was reported from Lucedale, George County, on April 21.

OBSURE SCALE (Chrysomphalus obscurus Comst.)

California. H. J. Ryan (April 27): Earlier in the month, infestation of this scale was found on a small planting of pecans and English walnuts in the San Fernando Valley. This is the first infestation I can find any record of in California and so far as I know, the first record of its being taken on English walnut trees.

CITRUS

FRUIT FLIES (Anastrepha spp.)

Texas. Bureau of Plant Quarantine News Letter No. 27, U. S. D. A. (March 1): Three adult male A. ludens Loew and one adult female A. fraterculus Wied. were taken in traps operated in groves on the American side of the river during January. These were the first adults to be taken in the Valley

since May, 1932, during which month five adult A. ludens were taken in the traps. The A. fraterculus was the second of this species ever to be taken in the Valley. In Mexico this species of fruit fly primarily feeds on plums or "ciruelas". Intensive inspection of the fruit remaining in the groves in which the adults were taken and in the surrounding groves gave negative results.

GREEN CITRUS APHID (Aphis spiraeicola Patch)

Florida. J. R. Watson (April 24): A. spiraeicola becoming less abundant as citrus foliage matures.

CITRUS WHITEFLY (Dialeurodes citri Riley and Howard)

Florida. (J. R. Watson (April 24): The citrus whitefly is moderately abundant. Emerging generally all over Florida.

Mississippi. C. Lyle and assistants (April): During the third week in April the citrus whitefly was reported from many parts of the State, where it was attacking citrus and various ornamentals. No very severe damage, however, was reported. (Abstract, J.A.H.)

PURPLE SCALE (Lepidosaphes beckii Newm.)

Mississippi. C. Lyle and assistants (April): The purple scale is scarce in East Jackson County, and moderately abundant on citrus at Ocean Springs. (Abstract, J.A.H.)

CITRUS RUST MITE (Phyllocoptes oleivorus Ashm.)

Mississippi. C. Lyle and assistants (April): The citrus rust mite is moderately abundant on ornamentals and strawberry at Meridian; and is reported as moderately abundant from Marion, Lamar, Pearl River, and Forrest Counties. (Abstract, J.A.H.)

FIG

APPLE TWIG BORER (Amphicercus bicaudatus Say)

Mississippi. C. Lyle (April 22): Fig twigs injured by A. bicaudatus were received from Senatobia, Tate County, on April 3. We have no previous records of this species attacking fig.

TRUCK - CROP INSECTS

VEGETABLE WEEVIL (Listroderes obliquus Gyll.)

South Carolina. A. Lutken (April 13): About March 13 I noticed weevil larvae feeding in the buds of spinach in my garden at Clemson College. I enclosed one of the plants with wire; today three of the adults emerged. No larvae could be found on nearby turnips at the time they were found on spinach. (Det. L.L.Buchanan.)

Mississippi. C. Lyle (April 22): A correspondent at Orange Grove, Jackson County, reported on April 10 that adults were very abundant on young tomato plants. Complaints of a less serious nature were received during the past month from Kosciusko, Attala County; Morgan City, Leflore County; and Doss-ville, Leake County.

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.)

Oregon. D. C. Mote (April 10): A spotted cucumber beetle was laying eggs at the base of a broad-leaf plantain plant near Corvallis on April 3. (B.G. Thompson.)

FLEA BEETLES (Halticinae)

Alabama. J. M. Robinson (April 21): Flea beetles are very abundant on tomato in Tuskegee.

Utah. G. F. Knowlton (April 8): Hop flea beetles (Psylliodes punctulata Melsh.) are abundant upon Russian thistle and other weed hosts in many parts of Utah, Boxelder, Salt Lake, and Tooele Counties.

NORTHERN MOLE CRICKET (Gryllotalpa hexadactyla Perty)

Alabama. J. M. Robinson (April 21): Mole crickets are moderately abundant in gardens in Camden.

Mississippi. C. Lyle and assistants (April): Mole crickets are very abundant at Ocean Springs in gardens. (Abstract, J.A.H.)

APHIDS (Aphidae)

Kansas. H. R. Bryson (April 23): Plant lice have been reported causing injury to radishes at Sedan and at Manhattan.

GREENHOUSE CENTIPEDE (Scutigera immaculata Newp.)

California. A. E. Michelbacher (April 20): In the Sacramento River Delta district the garden centipede has done some damage to the stand of sugar beet in several places. Several fields were replanted and even then a perfect stand was not obtained because of the attack of this pest.

POTATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

- Virginia. H. G. Walker (April 26): Colorado potato beetles are moderately abundant. The first beetle was observed feeding in the field on April 17, 1933.
- North Carolina. W. A. Thomas (April 12): This insect is unusually abundant for this season of the year. The adults have already begun depositing eggs on the foliage of young potatoes.
- South Carolina. A. Lutken (April 24): Colorado potato beetles are scarce in the northwestern part of the State. A few adults and eggs were noted by April 20.
- Georgia. W. H. Clarke (April 20): The Colorado potato beetle is moderately abundant at Yatesville.
- Florida. J. R. Watson (April 24): The Colorado potato beetle is moderately abundant. It was collected by C. C. Goff in Lake County. This is much farther south than it has heretofore been caught. It was also reported from San Antonio, still farther to the southwest, but no specimens were received.
- Alabama. K. L. Cockerham (April 6): Adults and egg clusters were plentiful in Irish potatoes in experimental plats in Foley, April 6. On the above date dusting was resorted to in order to catch the young brood of larvae.
- Mississippi. C. Lyle and assistants (April): The Colorado potato beetle was moderately abundant throughout the State during the last half of April, and unusually abundant in the south-central counties. (Abstract, J.A.H.)

POTATO TUBER WORM (Gnorimoschema operculella Zell.)

- North Carolina. C. H. Brannon (March 9): Heavily infested potatoes were sent in from Kinston, Lenoir County. The tuber worm was reported very destructive last year.

EGGPLANT

CORN EAR WORM (Heliothis obsoleta Fab.)

- Florida. J. R. Watson (April 24): A specimen mining eggplant was received from Manatee County.

BEANS

BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

- South Carolina. A. Lutken (April 24): Bean leaf beetles have caused some damage in Oconee County.

Alabama. K. L. Cockerham (April 5): The bean leaf beetle was fairly plentiful at Foley on April 5.

Mississippi. C. Lyle (April 22): The first serious complaint we have received this spring came from Picayune, Pearl River County, on April 5, the correspondent indicating that the beetles were "devouring" plants such as beans and peas." They were also reported as causing medium injury to beans at Dossville, Leake County, on April 13, while a correspondent at Clarksdale, Coahoma County, stated on April 10 that he had observed them to some extent on phlox and sweet william plants.

SEED CORN MAGGOT (Hylemyia cilicrura Rond.)

Virginia. H. G. Walker (April 26): The seed corn maggot is moderately abundant generally, but several cases of severe infestation of beans have been observed and others reported.

North Carolina. C. H. Brannon (April 22): Sprouting beans have been sent in from Greensboro heavily infested.

CABBAGE

IMPORTED CABBAGE WORM (Ascia rapae L.)

North Dakota. J. A. Munro (April 21): The imported cabbage worm is scarce in Fargo. A few adults were seen during the past few days.

Missouri. L. Haseman (April 24): Recently a few adults were observed on the wing at Columbia, but later and less abundant than usual.

Tennessee. G. M. Bentley (April): Moderately abundant March 28 and April 1 at Knoxville.

Utah. G. F. Knowlton (April 8): Adults are active in many parts of northern Utah, and were noted to be quite abundant in one field at Spanish Fork.

DIAMOND-BACK MOTH (Plutella maculipennis Curt.)

Alabama. J. M. Robinson (April 21): The diamond-back moth is moderately abundant on cabbage at Mobile.

Mississippi. K. L. Cockerham (April 26): On April 26 a forty-three acre field of cabbage was heavily infested with larvae of the diamond-back moth at Picayune.

HARLEQUIN BUG (Murgantia histrionica Hahn)

Virginia. H. G. Walker (April 26): The harlequin bug is rather scarce at Norfolk, indicating that there must have been a very high winter mortality, or that many of them have not emerged from hibernation, as very large numbers of them went into hibernation last fall.

North Carolina. W. A. Thomas (April 15): This insect is much less abundant at this season at Chadbourn this year than last year. Only an occasional specimen can be seen in the average home garden.

South Carolina. A. Lutken (April 24): Harlequin bugs are moderately abundant in Oconee County.

Alabama. J. M. Robinson (April 21): The harlequin bug is moderately abundant on turnips in Auburn.

Mississippi. C. Lyle and assistants (April): Harlequin bugs were very abundant in Leake, Pike, Bolivar, Sunflower, Stone, Copiah, and Lincoln Counties, and causing considerable injury to tender vegetables, such as mustard and turnips. (Abstract, J.A.H.)

Texas. D. C. Parman (April 25): The harlequin bug is very abundant in Uvalde.

CABBAGE APHID (Brevicoryne brassicae L.)

Virginia. H. G. Walker (April 26): In general the cabbage aphid is rather scarce, especially on cabbage, but it is not uncommon to find occasional plants in seed-kale fields that are heavily infested.

Kentucky. W. A. Price (April 24): Specimens of "frost-proof" cabbage were received on April 7 from Canmer. These plants were literally covered with cabbage aphids.

North Carolina. W. A. Thomas (April 1): In some home gardens these insects have been unusually destructive this season at Chadbourn, especially on cabbage and rape.

C. H. Brannon (March 22): Cabbage aphids are very destructive to cabbage all over the State.

CABBAGE CURCULIO (Ceutorhynchus rapae Gyll.)

Kentucky. W. A. Price (April 24): The cabbage curculio has damaged many cabbage plants in the vicinity of Lexington.

ASPARAGUS

ASPARAGUS BEETLE (Crioceris asparagi L.)

South Carolina. A. Lutken (April 24): Asparagus beetles are abundant throughout the central part of the State.

CUCUMBER

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Florida. J. R. Watson (April 24): The striped cucumber beetle is very abundant in the Everglades only.

Missouri. L. Haseman (April 24): At Columbia the first striped cucumber beetles were taken on April 24, on hawthorn blossoms.

WESTERN STRIPED CUCUMBER BEETLE (Diabrotica trivittata Mann.)

California. F. H. Wymore (April 25): April 13, Mr. H. P. Garin reported by telegram that the striped cucumber beetle was seriously damaging his crop of young cantaloupe plants at Delano.

ONION THRIPS (Thrips tabaci Lind.)

Florida. J. R. Watson (April 25): T. tabaci was severely injuring cucumbers at Leesburg in Lake County.

SPINACH

GREEN PEACH APHID (Myzus persicae Sulz.)

Virginia. H. G. Walker (April 26): The green peach aphid is becoming rather abundant in some spinach fields at Norfolk, but in general it is rather scarce.

ONIONS

ONION THRIPS (Thrips tabaci Lind.)

Virginia. H. G. Walker (April 26): The onion thrips is becoming moderately abundant on onions at the Virginia Truck Experiment Station.

STRAWBERRY

STRAWBERRY WEEVIL (Anthonomus signatus Say)

North Carolina. W. A. Thomas (April 15): The strawberry weevil began emerging from hibernation on March 14 at Chadbourn and by the 20th there was considerable evidence of its activity in the strawberry fields. As a whole, the injury has not been so severe as in some former years.

STRAWBERRY LEAF ROLLER (Ancylis comptana Froel.)

North Carolina. L. B. Reed (April 21): Adults are present in the fields at Chadbourne but no injury has been noted.

COMMON RED SPIDER (Tetranychus telarius L.)

North Carolina. W. A. Thomas (April 14): There is usually a small amount of damage by red spiders almost every year in the area around Chadbourn, but following the dry March practically every strawberry field in the Chadbourn area is now more or less heavily infested. In some areas the plants have been so seriously injured as to prevent the production of marketable fruit. Growers are much concerned over damage caused by these insects. Some plants have died outright as a result of their attack.

FIELD CRICKET (Gryllus assimilis Fab.)

North Carolina. W. A. Thomas (April 22): The black field cricket is now causing considerable damage at Chadbourn to developing strawberries, the outer surface being gnawed on both green and ripe fruit, rendering it worthless for market purposes. The injury is confined almost entirely to those fields where no poison sulphur dust was applied for weevil control.

California. F. H. Wymore (April 25): The common field cricket, G. assimilis, occurred in great numbers near Woodland on April 23, migrating into fields of green vegetation from a field where the vegetation was drying up. Various species of birds, including the red-winged blackbird, cow bird, killdeer, etc., were feeding on them.

LESSER CORN STALK BORER (Elasmopalpus lignosellus Zell.)

North Carolina. L. B. Reed (April 21): The lesser corn stalk borer has been causing some injury to strawberries at Chadbourn, but not so much as during last year.

A SPITTLE BUG (Aphrophora permutata Uhl.)

Oregon. D. C. Mote (April 10): The spittle bug A. permutata appeared in a field on April 1 on strawberries at Lacombe. (W. D. Edwards.)

A SPITTLE BUG (Philaneus leucophthalmus L.)

Oregon. D. C. Mote (April 10): The spittle bug P. sounarius was found in a field at Woodburn on April 11. (K. W. Gray.)

A CURCULIONID (Geoderces sp.)

California. L. M. Smith (April 12): Geoderces, probably a new species, again inflicted severe injury to strawberries in a few localized areas of the Santa Clara Valley. Infested plants showed from 3 to 32 larvae feeding on the roots this spring. At the present time the majority of the specimens are in the pupal stadium.

STRAWBERRY MITE (Tarsonemus fragariae Zimm.)

California. L. M. Smith (April 13): The strawberry mite is now present in great numbers in certain strawberry patches in the Santa Clara Valley. During the past three years this mite has been scarce in the spring and abundant in the fall. At the present time, however, it is as abundant in some patches as it has been at the peak of its occurrence in the fall.

BEETS

BEET LEAFHOPPER (Eutettix tenellus Bak.)

Utah. G. F. Knowlton (April 19): The beet leafhopper is moderately abundant in northern Utah in some breeding grounds.

TOBACCO

TOBACCO FLEA BEETLE (Epitrix parvula Fab.)

Virginia. H. G. Walker (April 26): The tobacco flea beetle is moderately abundant on potatoes at Norfolk.

Kentucky. W. A. Price (April 24): Flea beetles on tobacco have been reported from many places in the State. Among these were Owensboro, Bowling Green, Lexington, Paris, Georgetown, Richmond, and Winchester.

Tennessee. J. U. Gilmore (April 25): This pest has not appeared in sufficient numbers in tobacco plant beds this spring to cause serious loss of plants. Many beds have not been dusted, whereas usually two or three treatments were needed to save beds from destruction where the beds were poorly canvassed.

Mississippi. C. Lyle and assistants (April): This insect was reported attacking tomatoes in several parts of the State. (Abstract, J. A. H.)

CLOVER LEAF WEEVIL (Hypera punctata Fab.)

Kentucky. W. A. Price (April 24): The clover leaf weevil has been taken from tobacco beds where it was causing considerable injury. The beds so damaged were located at Lexington, Paris, and Georgetown.

TOBACCO THRIPS (Frankliniella fusca Hinds)

Florida. F. S. Chamberlin (April 26): Heavy rains during the past few weeks have been very detrimental to thrips populations in Gadsden, and very few are to be found on tobacco plants.

A CRANE FLY (Limnobia sp.)

Tennessee. J. Milam (April 25): Last spring this unusual pest of tobacco plant beds caused some actual loss of plants due to excessive aeration of the dry soil at Clarksville. It also caused considerable apprehension on the part of the farmers. In the same localities this season the same farmers report that this pest is practically absent.

A CRANE FLY (Nephrotoma suturalis Loew)

Florida and Georgia. J. R. Watson (April 24): A crane fly larva, provisionally identified as N. suturalis, was severely damaging newly set tobacco plants at Monticello. This damage was reported to be extensive in Georgia.

A MIDGE (Camptocladius byssinus Schrank)

North Carolina. C. H. Brannon (April 1): This species, determined by C. T. Greene, has been present in large numbers in tobacco plant beds from Raleigh east. Growers report that the larvae are very destructive.

FOREST AND SHADE - TREE INSECTS

FALL CANKER WORM (Alsophila pometaria Harr.)

Vermont. H. L. Bailey (April 26): Many eggs of the fall canker worm were observed on elm trees at Burlington, April 6. These were on the trunks below sticky bands which had been applied last fall. Several adults of the spring canker worms were noted at the same time.

New York. R. D. Glasgow (April 24): Egg masses of the fall canker worm are unusually abundant in many parts of southeastern New York. In 1932 this insect caused severe injury to, and occasionally complete defoliation of, ornamental and forest trees in southeastern New York; and similar injury, in 1933, appears to be in prospect, at least for parts of the same area.

CANKER WORMS (Geometridae)

North Dakota. J. A. Munro (April 21): Canker worms are moderately abundant in Fargo. Moths began to appear April 15.

SPRING CANKER WORM (Paleacrita vernata Peck)

South Dakota. H. C. Severin (April 1): The first moth, female, was found April 1 (or 7th - writing indistinct) at Brookings.

Kansas. H. B. Hungerford (April 12): Spring canker worms are abundant at Lawrence this season. Fall canker worms also are abundant at Lawrence.

GYPSY MOTH (Porthetria dispar L.)

New Jersey. New York Packer (April 1): After no signs of the gypsy moth had been found in New Jersey for four years and the State was considered to be free of any infestation of the insect, employees of the State Department of Agriculture recently discovered a gypsy moth egg mass near Mount Freedom, in Morris County, the Department has announced. The egg mass found probably represents wind dispersion from an undiscovered colony, probably within several miles of Mount Freedom, the Department believes. Although it has only a skeleton gypsy moth staff, supervisor, and three scouts, it is endeavoring to locate the parent infestation by thoroughly scouting in widening circles the area surrounding Mount Freedom. Because of reduced Federal appropriations, the Department has to carry on the work without assistance from the United States Department of Agriculture. The egg mass was sent to the gypsy moth laboratory of the United States Department of Agriculture, in Greenfield, Mass., and was found to be new and viable.

BAGWORM (Thyridopteryx epheneraeformis Haw.)

Ohio. E. W. Mendenhall (April 24): According to the number of bags on the shade trees, the indications are that the bagworms will be plentiful in the vicinity of Columbus and in southwestern counties. Some property owners have handpicked them, which will help to diminish the population of bagworms.

OBSURE SCALE (Chrysomphalus obscurus Comst.)

Ohio. E. W. Mendenhall (April 24): I found the obscure scale quite plentiful on shade trees in nurseries about Dayton. The shade trees on which it was found were maples, oaks, and some others.

BEECH

A CERAMBYCID BEETLE (Xylotrechus quadrimaculatus Hald.)

Connecticut. E. P. Felt (April 24): A limb pruner, X. quadrimaculatus, was found somewhat abundant in a European beech hedge at New Canaan, and also on other beeches in the vicinity. In the case of the beech hedge, possibly 5 per cent of the branches were cut off, some of them having a diameter of over 2 inches. This insect has also been recorded from alder and birch.

ELM

ELM LEAF BEETLE (Galerucella xanthomelaena Schr.)

New York and Connecticut. E. P. Felt (April 24): Elm leaf beetles were found hibernating in numbers, presumably in a building, in the Bronx, and this, taken in connection with a similar report from Greenwich, Conn., indicates that the pests are wintering successfully and may be destructive later.

A WEEVIL (Magdalis armicollis Say)

South Dakota. H. C. Severin (April 10): The elm snout beetle is giving us considerable trouble in the eastern third of the State, where it is destroying the tops of many of our trees.

Kansas. H. R. Bryson (April 23): Specimens of Calligrapha scalaris Lec. were collected at Pratt by E. G. Kelly, Extension Entomologist. These beetles were feeding in large numbers on an unknown species of elm.

ELM CASE BEARER (Coleophora limosipennella Dup.)

New York. E. P. Felt (April 25): The elm case bearer was found in very large numbers on an elm at Millbrook, some of the partly grown case bearers being already on the tips of buds awaiting the appearance of the young leaves.

OAK

A CYNIPID (Disholcaspis persimilis Ashm.)

Mississippi. C. Lyle (April 22): On April 8 a correspondent at Darling, Quitman County, sent to this office specimens of live oak twigs containing galls caused by D. persimilis. He indicated that live oaks in that vicinity showed heavy infestations of these galls.

A CYNIPID (Dryophanta aquatica Ashm.)

Mississippi. C. Lyle (April 22): Correspondents at Magee, Simpson County, and Meridian, Lauderdale County, recently sent to this office oak twigs showing very light infestations of galls caused by Dryophanta sp., probably D. aquatica.

A CERAMBYCID BEETLE (Phymatodes testaceus var. variabilis L.)

Tennessee. G. M. Bentley (April): Oak borer very abundant in eastern Tennessee.

PINE

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana Schiff.)

New England, New York, and New Jersey. E. P. Felt (April 24): The European pine shoot moth continued prevalent in southwestern New England, southeastern New York, and northern New Jersey, individual pines being so badly infested as to produce stubby masses at the ends of a large proportion of the shoots.

SOUTHERN PINE BEETLE (Dendroctonus frontalis Zimm.)

Middle Atlantic States. R. A. St. George (April 19): For the first time in 40 years D. frontalis has reappeared in epidemic status within the most northern limits of its range. It is known to have infested at least two counties in southern Pennsylvania, several localities between Washington, D. C., and Cumberland, Md., and Fairfax County, Va. Although several species of pines have been attacked, virgin shortleaf has probably suffered most. Examination of samples from several hundred acres of merchantable pine timber near Fairfax, Va., revealed heavy broods of the beetle that have successfully overwintered in the stems of the trees. Woodpeckers have worked the mid and upper portions of the trunks quite heavily, probably aiding materially in reducing the numbers of the pest. The infested trees are believed to have been weakened as a result of the drought which has prevailed in this region for the past two years. Combined with this, mild winters have favored insect development. This is regarded as the most notable outbreak of this beetle since that of 1895 in this section.

RED TURPENTINE BEETLE (Dendroctonus valens Lec.)

Pennsylvania. J. W. Knull (April 18): The first adults were observed in flight at Hummelstown on April 18.

SPRUCE

SITKA SPRUCE GALL APHID (Gillettea cooleyi Gill.)

Connecticut. W. E. Britton (April 22): Present in Bethlehem and Southington. In both instances the old galls only were submitted and examined.

SPRUCE GALL APHID (Adelges abietis Kalt.)

Michigan. R. H. Pettit (April 25): Inquiries are coming in about the pine-apple gall of spruce. These specimens came from Whitehall.

INSECTS AFFECTING GREENHOUSE
AND ORNAMENTAL PLANTS

BEET FLEA BEETLE (Disonycha xanthomelaena Dalm.)

Mississippi. C. Lyle (April 22): Severe injury to phlox and sweet william plants by D. xanthomelaena was reported from Clarksdale, Coahoma County, on April 10.

ROUND-HEADED APPLE TREE BORER (Saperda candida Fab.)

Alabama. J. M. Robinson (April 21): The round-headed apple tree borer is moderately abundant on dogwood in Birmingham and Huntsville.

FLOWER THRIPS (Frankliniella tritici Fitch)

South Carolina. Alfred Lutken (April 24): The flower thrips, F. tritici, and others, were present in large numbers on spirea, dogwood, and wild cherry by April 15.

COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

Georgia. J. B. Gill (April 26): The cottony cushion scale infestations continue to be reported from scattered localities in the southern portion of Georgia, where ornamentals have been severely injured.

QUINCE LACEBUG (Corythucha cydoniae Fitch)

Connecticut. E. P. Felt (April 24): Lacebug, C. cydoniae, work was found somewhat prevalent upon the evergreen thorn or so-called fire thorn in Greenwich.

RHODODENDRON

RHODODENDRON LACEBUG (Stephanitis rhododendri Horv.)

New England. E. P. Felt (April 24): The rhododendron lace bug, S. rhododendri, is somewhat abundant and injurious in southwestern New England, southeastern New York, and northern New Jersey.

SUGAR MAPLE TIMBER BEETLE (Corthylus punctatissimus Zimm.)

New Jersey. E. P. Felt (April 24): The pitted ambrosia beetle, C. punctatissimus, was found somewhat prevalent in rhododendrons at Englewood, possibly 10 per cent of the stems being infested in a considerable planting.

ROSE

FLORIDA FLOWER THRIPS (Frankliniella tritici bispinosa Morg.)

Florida. J. R. Watson (April 25): The Florida flower thrips has been unusually injurious, especially on roses. It destroyed absolutely all wisteria blooms in the vicinity of Gainesville. It has been abundant also in Japonica blossoms.

ROSE SCALE (Aulacaspis rosae Bouche)

West Virginia. L. M. Peairs (April 24): The rose scale is moderately abundant on raspberries in Fayette County.

Ohio. E. W. Mendenhall (April 24): I find rose plants and some blackberry plantations in Fairfield County badly infested with the rose scale. It is not so hard to control, but where the plants are so badly infested it seems to be due to neglect.

ROSE APHID (Macrosiphum rosae L.)

Alabama. J. M. Robinson (April 21): The rose aphid is moderately abundant on roses in Elberta.

TAXUS

BLACK VINE WEEVIL (Brachyrhinus sulcatus Fab.)

Connecticut. W. E. Britton (April 22): A Taxus plant 3 feet tall had yellow leaves and on digging it up the roots had the bark eaten off in patches and 5 larvae of this beetle were found, submitted, and identified. Many such instances have come to our attention during the past few years.

GERANIUM

OBLIQUE-BANDED LEAF ROLLER (Cacoecia rosaceana Harr.)

Washington. M. H. Hatch (March 31): Archips rosaceana is attacking geranium and other plants in the greenhouse on the University campus at Seattle in considerable abundance.

I N S E C T S A T T A C K I N G M A N A N D

D O M E S T I C A N I M A L S

MAN

MOSQUITOES (Culicinae)

Oregon and Washington. H. H. Stage (April 19): Aedes pullatus Coq. was very abundant in the Olympic National Forest. Found in collections of rain water in trail. Theobaldia incidens Freeborn was moderately abundant for 20 miles along upper Hot River. They were not particularly troublesome to humans but settled mostly on horses.

SAND FLY (Culicoides spp.)

Georgia and South Carolina. W. E. Dove and D. G. Hall (April): C. canithorax Hoff. was very abundant and annoying during March and the early part of April in Brunswick and Savannah, Ga., and in Charleston, South Carolina. The incidence had an abrupt decline when the spring tides of April occurred. C. dovei Hall is appearing at Savannah, Ga., (April 20): This species will be accompanied by C. melleus Coq. and the two will be annoying throughout the

summer months. C. guttipennis Coq. and C. biguttatus Coq. have been reared from large numbers of the rot holes in trees, and these species are beginning to occur in nature. During the spring months, sand flies were found in 3 to 5 miles from salt marsh breeding places. They are abundant about herds of dairy cattle.

EYE GNAT (Hippelates spp.)

Georgia. W. E. Dove and D. G. Hall (April 20): Hundreds of Hippelates were caught in a home made trap which was located on a high point in a salt marsh in Savannah. The trap was baited with fish meal in salt water. As yet these pests are not annoying to man.

Texas. D. C. Farman (April 25): Eye gnats are abundant to very abundant in some sections.

CATTLE

SHORT-NOSED CATTLE LOUSE (Haematopinus eurysternus Nitz.)

Nebraska. M. H. Swenk (March 25 to April 20): Another report of an infestation of cattle with the short-nosed sucking louse (H. eurysternus) was received from Custer County during the first week in April.

CATTLE GRUBS (Hypoderma spp.)

Iowa. R. W. Wells (April 24): A few H. bovis DeG. had dropped by this date. We estimate the dropping to have begun about April 5. This species is by far the more abundant of the two in the northeastern part of Iowa.

North Dakota. J. A. Munro (April 21): Of 68 steers examined at Fargo by P. F. Trowbridge and F. W. Christinson, of the State Agricultural College, March 16, only 37 were free of grubs. The 31 infested averaged nearly 2 grubs per animal.

HORN FLY (Haematobia irritans L.)

Texas. D. C. Farman (April 25): 200 to 2500 per animal.

DEER

ECTOPARASITES

Pennsylvania. Monthly Letter of the Bureau of Entomology, U. S. D. A., No. 225 (January): Ectoparasites of deer in Pennsylvania. -- Harold S. Peters, Takoma Park, Md., spent December 5 to 7 studying the ectoparasites of deer in south-central Pennsylvania, a continuation of a cooperative study made in the deer-hunting seasons of 1930 and 1931. An examination of 19 deer yielded 34 Tricholipeurus virginianus Peters, 4 Cervophthirius crassicornis (Nitzsch), and 28 Dermacentor nigrolineatus Packard. Mr. Peters says, "It is interesting to note that only one species of biting louse was found, as in other parts of the State two species have been found. No especially

heavy infestation was observed. But this information does show us that there is a sufficient infestation of external parasites to cause severe damage should conditions become favorable for a sudden increase. The past three years' survey shows that the lice and ticks are found on deer throughout the main deer sections of Pennsylvania." T. virginianus has been collected in 13 counties. "This species of biting louse makes up about 90 per cent of the biting lice on Pennsylvania deer and was undescribed until 1930." T. parallelus (Osborn), another biting louse, has been found in 7 counties. "This is the so-called 'common deer louse' but really makes up only about 10 per cent of the biting lice on Pennsylvania deer." C. crassicornis, a sucking louse, ~~generally~~ rather rare on eastern deer, was found in 7 counties. The tick D. nigrolineatus was found in 9 counties of the State.

HORSE

BUFFALO GNATS (Simuliidae)

Mississippi. State Plant Board of Mississippi (April 8): Reports reaching the Entomology Department indicate that buffalo gnats are present in large numbers in the vicinity of Greenwood, and that livestock are suffering from their attacks. Their presence in numbers is attributed locally to the rising of the flood waters. Many planters are already burning smudges in fields and around barnyards.

C. Lyle and assistants (April): The outbreak of buffalo gnats, reported in a previous number of the Insect Pest Survey Bulletin, has very materially subsided, although reports of abundance are still being received from many parts of the State. (Abstract, J.A.H.)

BOTFLIES (Gastrophilus spp.)

Iowa. Monthly Letter of the Bureau of Entomology, U. S. D. A., No. 225 (January): Botfly larvae in horses' tongues decrease with the advance of winter.--To determine "how late in the winter, in the northern latitudes, horses may continue ingestion of botfly (G. intestinalis DeG.) larvae issuing from the eggs carried by the host after the last of the fly activity," E. F. Knipling, Ames, Iowa, made a count of all larvae found in 20 tongues purchased from a disposal plant. The following counts in tongues examined on different dates show the waning infestation: On December 1, 52 larvae in 5 tongues; on December 9, 31 larvae in 3 tongues; on December 10, 114 larvae in 2 tongues; on December 13, 63 larvae in 3 tongues; on December 17, 23 larvae in 5 tongues; and on December 31, 7 larvae in 2 tongues. The stomachs and duodena of 8 of these horses were examined and following are the findings: 938 G. nasalis L. in the duodena; 603 G. intestinalis DeG. in the stomachs; 1 G. haemorrhoidalis L. in a stomach."

SHEEP

SHEEP BOTFLY (Oestrus ovis L.)

Michigan. R. H. Pettit (April 25): I received today two samples of grub-in-the-head of sheep, sent in to me from Marion. I am sending you this record, since it is so unusual in Michigan. These two samples were sneezed out and were accompanied with bloody mucous, as is usual.

HOUSEHOLD AND STORED-PRODUCTS

INSECTS

TERMITES (Reticulitermes spp.)

United States. T. E. Snyder (March): During March 195 cases of termite damage were reported to the Bureau of Entomology. The following list gives the number of cases reported from each section: New England, 3; Middle Atlantic, 94; South Atlantic, 24; East Central, 25; North Central, 4; West Central, 6; Lower Mississippi, 30; Southwest, 2; Pacific Coast, 7.

West Virginia. L. M. Peairs (April 24): Many reports of termites have been received from Morgantown, Huntington, and other points.

Ohio. E. W. Mendenhall (April 24): Complaints have come in concerning termites working their way through cellars and in foundations of buildings in Columbus, and found doing damage in greenhouses in Dayton. If not destroyed, they may do considerable damage.

Illinois. J. H. Bigger (April 17): Termites very abundant April 15. They were seen swarming March 18 at Jacksonville. I have examined 8 properties in the last few weeks.

Kentucky. W. A. Price (April 24): During the past three weeks, April 3 to 24, winged termites have been extant and inquiries have been received from all sections of the State.

Iowa. C. J. Drake (April): Termites have been increasing in numbers in Iowa for the past 10 years. Considerable damage is being done in the southern half of the State, particularly along the Mississippi and Missouri Rivers and in Des Moines.

Kansas. H. R. Bryson (April 23): April 8, termites were discovered doing extensive damage to maple floors and casings of doors in a modern grade building at Manhattan. This was a wooden floor laid on cement. Stakes driven into the ground, making contact with the joists, furnished a means of connection between the floor and the ground. It is estimated that around \$5,000 loss has been incurred. (April 15): Termites were reported injuring a dwelling at Atchison. Either termite injury is on the increase or people have become interested to such an extent as to look for it. Probably both conditions are true.

Nebraska. M. H. Swenk (March 25 to April 20): Termites (R. tibialis Bks.) were reported during the first half of April as having badly injured a house in Omaha and destroyed trees in Furnas County.

Tennessee. G. M. Bentley (April): There were swarms of winged adults in Elizabethton on March 25, and in Knoxville on March 23 and April 2.

California. R. Bogue (April 7): There have been considerable spring flights of termites, starting about March 25, to date, mostly R. hesperus Bks. with a few R. tibialis in Los Angeles.

BEDBUG (Cimex lectularius L.)

South Dakota. H. C. Severin (April 10): An unusually large number of requests for information concerning destruction of bedbugs were received by us during the past winter.

CLOVER MITE (Bryobia praetiosa Koch)

Connecticut. W. E. Britton (April 22): The clover mite was found crawling about over papers in a small wood office building remodeled from an old stable at Madison. The owner thought that possibly it was a stable pest. Eggs of this mite were also received from West Haven on bark of red pine, in February.

BOXELDER BUG (Leptocoris trivittatus Say)

Maryland. E. N. Cory (April 21): The boxelder plant bug continues to be seen in numerous places.

Wisconsin. E. L. Chambers (April 25): Many inquiries concerning the ravages of the boxelder bug are continuing to come into the office, as the pest is becoming active and crawling about the premises again with the approach of warm weather. Last summer seems to have been one of the most severe boxelder bug years we have had in Wisconsin, according to our records, for many years.

South Dakota. H. C. Severin (April 10): Boxelder bugs are more abundant than usual and giving us considerable trouble because they are invading homes. Eastern third.

BROWN SPIDER BEETLE (Ptinus brunneus Duft.)

Wyoming. C. L. Corkins (April 10): (Farmers State Bank of Jay Em) --A customer of ours brought these insects to us and asked that we send them in. It seems that swarms of these insects are around their yard and in their house and other buildings. They have tried every way that they know of to get rid of them in the house but do not have any success. ***This is the first year that these insects have appeared there. A residence just across the road from them is not bothered with them at all. These people are very clean and their premises are kept well cleaned up. They do not have any cattle yards or barns near the house. They did get some soil from a water hole to fill in a place that blowed out in their yard and they thought that these bugs might have come from that soil although the party living across the road from them also got some of this same soil and does not have any of these bugs around.

ARGENTINE ANT (Iridomyrmex humilis Mayr)

Alabama. J. M. Robinson (April 21): The Argentine ant is moderately abundant in houses in Demopolis.

DOG FLEA (Ctenocephalides canis Curt.)

Nebraska. M. H. Swenk (March 25 to April 20): On April 1, a Polk County correspondent reported that he noticed fleas (C. canis) on his place for the first time last August. When cold weather started they stopped bothering, but were again annoying beginning the last week in March.

BLACK WIDOW SPIDER (Lathrodectes mactans Fab.)

California. R. Bogue (April 7): Quite a few black widow spiders, L. mactans, are being found at this time. They have appeared somewhat earlier this year.

INSECT CONDITIONS IN COSTA RICA.

C. H. Ballou

San Jose, Costa Rica

(Unless otherwise indicated, observations were made at
San Pedro de Montes de Oca)

COCCIDAE

Aleurocanthus woglumi Ashby was present on sweet orange during March.

During January, February, and March Aulacaspis pentagona Targ. was abundant and injurious on Diospyros virginiana L. and peach.

In March Ceroplastes floridensis Comst. was attacking croton and sweet orange at San Pedro de Montes de Oca and Lourdes.

Chrysomphalus dictyospermi Morg. was very harmful on mango and sour orange during March.

Ischnaspis longirostris Sign. was found on mango March 7.

Pseudococcus citri Risso was present on sweet orange March 17.

Pseudococcus virgatus Ckll. was harmful to croton during March.

Pulvinaria psidii Mask. was found on Diospyros kaki March 7, on D. virginiana March 13, and during the month on ylang-ylang.

Saissetia hemisphaerica Targ. was taken on toronjo (Citrus sp.) March 10, and on coffee March 22.

Trionymus sacchari Ckll. was reported on sugarcane March 10.

Lepidosaphes beekii Newm. was very harmful to sweet orange during March.

APHIDIIDAE

Aphis illinoisensis Shim. was harmful to muscadine grapes during March.

Aphis pomi DeG. was taken on apple March 6.

Toxoptera aurantii Boyer was doing serious damage on March 31 on tender leaves of coffee plants that had been defoliated by Cercospora coffeicola B. & C. March 6, at Lourdes, and March 14 at San Pedro de Montes de Oca it was observed as very harmful on sweet orange.

Anoecia sp., a root aphid, (close to A. querci Fitch), was busily at work, with other insects, on rice and the rice suffered heavily, November 12 to December 18, 1932. (Det. P. W. Mason.)

MISCELLANEOUS HOMOPTERA

Cicadella sexlineata Sign. was reported on geranium (Pelargonium sp.) March 12.

Cicadella pardalina Fowl. was reported on mango March 9 and on Dillenia indica L. March 29.

Graphocephala coccinea Forst. was present on croton during March.

Graphocephala versuta Say was reported on mango March 24.

Aconophora pallescens Stal was very harmful on pepaya during March. It was also reported attacking avocado March 6, and sweet orange March 10.

Aethalion quadratum Fowl. was reported March 31 as very harmful on avocado.

Aethalion reticulatum L. was reported on ylang-ylang March 16.

During March the membracid Stictocephala festina Say was found on New Zealand spinach and soybeans.

During March Membracis mexicana Guer. was breeding on balsam (Impatiens balsamina). It was also reported on Mango March 10 and on soursop and annatto March 20.

Antianthe expansa Germ. was reported on avocado on March 17.

Bolbonota insignis Sign. reported March 10, as attacking mango.

HEMIPTERA

Corythucha gossypii Fab. was very harmful on soursop during March. There were numerous young on March 29.

Acanthocephala declivis Say var. guatemala Dist. was reported on sweet orange March 20.

During March Leptoglossus zonatus Dall. was a very harmful pest on tomato and also very injurious to the fruit of tree tomato. It was reported on coffee March 10 and on soybean March 31.

Stenomacra marginella H. S. was infesting avocado during the entire month of March and nymphs were very abundant. It was reported on croton and breeding on guineo (Musa sapientum L.) March 10.

During March Collaria oleosa Dist. was an important pest on soybeans and tomato foliage and very harmful on wheat, damaging almost all the foliage of some varieties. March 10 it was reported on carrot.

COLEOPTERA

Diabrotica balteata Lec. was a serious pest on New Zealand spinach, soybeans, and the foliage of tomato during March. It was reported March 6 on apple, March 9 and 27 on peach, March 10 on wheat, and March 22 on muscadine grape.

Diabrotica vittata Fab. was reported attacking Diospyros kaki March 1.

Diabrotica norracea Har. was present on soybean March 16.

November 12 to December 18, 1932, Diabrotica nummularis Har. is abundant and destructive on the tender new leaves that are beginning to appear on grapes; also eats the leaves of guisaro (Psidium molle Bertol.). Harmful to potato; also busily at work on rice. Destructive in the flowers of rose; harmful on tomato; very harmful on turnip; responsible for considerable damage to wheat. (Det. H. S. Barber.)

November 12 to December 18, 1932, the beetle Diabrotica viridula Fab. was responsible for considerable damage to wheat at San Pedro de Montes de Oca. (Det. H. S. Barber.)

The beetle Diabrotica ? sp. is responsible for considerable damage to wheat. Collected specimen December 7, 1932. (Det. H. S. Barber.)

The beetle Cerotoma sp. is harmful to cucumbers. Collected Nov. 24, 1932. (Det. H. S. Barber.)

The beetle Cerotoma rogersi Jac. ? was still present on beans (Phaseolus vulgaris L.) November 12 to December 18, 1932. January 15, C. rogersi Jac. ? was present on Casuarina equisetifolia L.

Cerotoma rogersi Jac. ? was taken on Phaseolus vulgaris L. August 31, 1932. (Det. H. S. Barber.)

Epitrix fuscata Jac.-Duv. was taken on muscadine grape March 22 and was an important pest on soybean March 13. During March this was a serious pest on the foliage of tomato.

Halticus canus Dist. was reported during March on wheat and on March 14 on soybean.

Guisaro (Psidium molle Bertol.). The weevil Attelabus (Xestolabus) conicollis Sharp eats the leaves. I took it in San Pedro de Montes de Oca in November 1932, and in El Cacao in January 1932. (Det. L. L. Buchanan.)

November 12 to December 18, the weevil Geraeus lentiginosus Boh. was apparently harmful in the flowers of avocado. (Det. L. L. Buchanan.)

November 12 to December 18 the beetle Euroctus (?subdeletus Bates) is usually found between the leaves of avocado that have been webbed together by caterpillars. (Det. L. L. Buchanan.)

November 12 to December 18 the beetle Crytorhopalum sp. is usually found between the leaves of avocado that have been webbed together by caterpillars. (Det. H. S. Barber.)

DIPTERA

During March Toxotrypana curvicauda Gerst. was very harmful on papaya. This insect destroys 100 per cent of the fruit.

LEPIDOPTERA

Eggs, larvae, and pupae of the butterfly Agraulis poeyi Butl. were present on grandilla (Passiflora ligularis A. Juss.). This is an important pest. March 4, 1933.

During March the moth Stenoma sororia Zeller was an important pest on avocado.

During March Pieris elodia Bdv. was present on nasturtium (Tropaeolum majus).

During March Azochis gripusalis Walk. was very harmful to fig.

On March 10 Papilio polyxenes Cr. was ovipositing on carrot.

During March Jocara claudalis Mosch. was observed on avocado; and J. subcurvalis Schs. was very harmful on avocado March 27.

